(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 15 January 2004 (15.01.2004)

PCT

(10) International Publication Number WO 2004/006623 A2

(51) International Patent Classification⁷: 7/02, C25D 11/02, 9/06

H04R 31/00,

(21) International Application Number:

PCT/EP2003/007189

(22) International Filing Date:

4 July 2003 (04.07.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0215767.5

8 July 2002 (08.07.2002) GB

0215768.3

8 July 2002 (08.07.2002) GB

- (71) Applicant (for all designated States except US): HAR-MAN INTERNATIONAL INDUSTRIES, INCORPORATED [US/US]; 8500 Balboa Boulevard, Northridge, CA 91329 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): POLFREMAN, Robert [GB/GB]; 3 Linden Gardens, Kidderminster DY10 3AA (GB). HARRIS, Michael [GB/GB]; 22 Belle Vue Crescent, Llandaff North, Cardiff CF14 2FJ (GB).

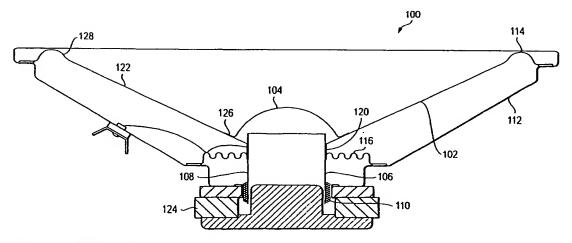
- (74) Agent: KUHL, Dietmar; Grünecker, Kinkeldey, Stockmair & Schwanhäusser, Maximilianstrasse 58, 80538 Munchen (DE).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LOUDSPEAKER DIAPHRAGM SYSTEMS



(57) Abstract: A loudspeaker diaphragm includes a continuous coating on at least one surface of the diaphragm. The continuous coating may be non-uniform and may taper from a maximum in value in one region of the diaphragm to a minimum value in another region of the diaphragm. The coating is formed in a single coating step without the need for use of a contact mask or interruption of the process to change process parameters. The tapered coating is formed by controlling the current density distribution within an electrochemical cell such that the rate of formation of the coating tapers from a first value in one region of the diaphragm to a second value is another region of the diaphragm.